Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

ANALYSIS REPORT

Prepared by:

Environmental

Prepared for:

Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601 Weston Solutions 13702 Coursey Blvd Bldg #7, STE A Baton Rouge LA 70817

Report Date: September 06, 2017

Project: Arkema Refinery

Account #: 19740 Group Number: 1845793 SDG: WAR01 PO Number: ARKEMA REFINERY State of Sample Origin: TX

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/. To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To \

Weston Solutions

Attn: Jeff Wright

Respectfully Submitted,

Ara Spercur Project Manager

(281) 967-8096

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SAMPLE INFORMATION

Client Sample Description	Collection Information	ELLE#
HH01-01-02-170901-21 Surface Water	09/01/2017 18:20	9190414
HH01-01-03-170901-21 Surface Water	09/01/2017 19:25	9190415
HH01-01-03-170901-22 Surface Water	09/01/2017 19:25	9190416
HH01-01-04-170901-21 Surface Water	09/01/2017 20:00	9190417
HH01-01-05-170901-21 Surface Water	09/01/2017 20:40	9190418
HH01-01-01-170901-21 Surface Water	09/01/2017 17:36	9190419

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.



Analysis Report

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Sample Description: HH01-01-02-170901-21 Surface Water

ELLE Sample # WW 9190414 ELLE Group # 1845793

Account # 19740

Project Name: Arkema Refinery

Weston Solutions 13702 Coursey Blvd Bldg #7, STE A

Submitted: 09/03/2017 11:05

Collected: 09/01/2017 18:20

Baton Rouge LA 70817

Reported: 09/06/2017 19:00

12-21 SDG#: WAR01-01

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	n.a.	n.a.	n.a.	
12121	VOC Targeted Librar	y Search	n.a.	Complete	0	0	1

00890 VOA GC/MS Library Search

The results from the volatile library search are listed on the attached FORM 1 - VOA-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

A library search against NIST 11 was performed on this sample with the intent of targeting the following suspected potential contaminants, and the potential breakdown products of the compounds.

Neodecaneperoxoic acid, 1,1- dimethylpropyl ester
Naphtha (petroleum), heavy alkylate
Naphtha (petroleum), hydrotreated heavy
Hydroperoxide, 1,1-dimethylpropyl
Peroxydicarbonic acid, dipropyl ester
Neodecaneperoxoic acid, 1-methyl-1- phenylethyl ester
Propaneperoxoic acid, 2,2-dimethylehtyl ester, 1,1-dimethylethyl ester
Peroxide, bis(1,1-dimethylpropyl)

The library search did not detect or identify any presumptive positive identifications.

GC/MS Semivolatiles SW-846 8270C n.a. n.a. n.a. n.a. 12126 SVOC Targeted Library Search n.a. Complete 0 0 0 1

00893 Semivolatile Library Search

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

A library search against NIST 11 was performed on this sample with the intent of targeting the following suspected potential contaminants, and the potential breakdown products of the compounds.

Neodecaneperoxoic acid, 1,1- dimethylpropyl ester
Naphtha (petroleum), heavy alkylate
Naphtha (petroleum), hydrotreated heavy
Hydroperoxide, 1,1-dimethylpropyl
Peroxydicarbonic acid, dipropyl ester
Neodecaneperoxoic acid, 1-methyl-1- phenylethyl ester
Propaneperoxoic acid, 2,2-dimethylehtyl ester, 1,1-dimethylethyl ester
Peroxide, bis(1,1-dimethylpropyl)

The library search did not detect or identify any presumptive positive identifications.

^{*=}This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: HH01-01-02-170901-21 Surface Water

ELLE Sample # WW 9190414 ELLE Group # 1845793

Account # 19740

Project Name: Arkema Refinery

Collected: 09/01/2017 18:20 Weston Solutions 13702 Coursey Blvd Bldg #7, STE A

Submitted: 09/03/2017 11:05

Reported: 09/06/2017 19:00

SDG#: WAR01-01

Sample Comments

Baton Rouge LA 70817

State of Texas Lab Certification No. T104704194-17-23

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

	Laboratory Sample Analysis Record								
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor	
12121	VOC Targeted Library Search	SW-846 8260B	1	E172481AA	09/05/2017	13:28	Kevin A Sposito	1	
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E172481AA	09/05/2017	13:28	Kevin A Sposito	1	
12126	SVOC Targeted Library Search	SW-846 8270C	1	17246WAA026	09/05/2017	13:05	Linda M Hartenstine	1	
00813	BNA Water Extraction	SW-846 3510C	1	17246WAA026	09/04/2017	20:30	Karen L Beyer	1	

^{*=}This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2308 • Fax: 717-656-2681 • www.LancasterLabs.com

Lab Name: Lancas Lab Code: LANCAS Matrix: (soil/wa	5.0 (g/mL)mL LOW dec. ap) CAP	D COMPOUNDS Contract: SAS No.: Lab Sample ID:	9190414 HP15648.i/ : 09/03/17 or: 1.0 ON UNITS:	-	21	! ! ! - s06.d
CAS NUMBER	! COMPOUND NAME	! ! RT	! ! EST.	CONC.	! Q	! !
1. VOCTIC 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20.	!=====================================	!		======	~	! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! !
21. 22. 23. 24. 25.	!		! !			!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
26	1	!	!		!	!

FORM I VOA-TIC



Analysis Report

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Lab Name: Lancas Lab Code: LANCAS Matrix: (soil/wate Sample wt/vol: 995 Level: (low/med) L	(g/mL) mL DW Decanted: (Y/N) ct Volume: 1000 (uL) 1 (uL) pH: CONC	Tract: S No.: Lab Sample Lab File I Date Recei Date Extra Date Analy Dilution F Extraction ENTRATION UN	SDG No.:_ ID: 9190414 D: bi0065.d ved: 09/03/17 cted: 09/04/17 zed: 09/05/17 actor: 1 : Sepf	! ! !
		!	! ! EST. CONC.	!
	: COMPOUND NAME			
2.	Total SVOC TICs			
! 30	!	!	!	!
page 1 of 1				

FORM I SV-1



Analysis Report

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Sample Description: HH01-01-03-170901-21 Surface Water

ELLE Sample # WW 9190415 ELLE Group # 1845793

Account # 19740

Project Name: Arkema Refinery

Weston Solutions

13702 Coursey Blvd Bldg #7, STE A

Submitted: 09/03/2017 11:05

Collected: 09/01/2017 19:25

Baton Rouge LA 70817

Reported: 09/06/2017 19:00

13-21 SDG#: WAR01-02

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	n.a.	n.a.	n.a.	
12121	VOC Targeted Librar	y Search	n.a.	Complete	0	0	1

00890 VOA GC/MS Library Search

The results from the volatile library search are listed on the attached FORM 1 - VOA-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

A library search against NIST 11 was performed on this sample with the intent of targeting the following suspected potential contaminants, and the potential breakdown products of the compounds.

Neodecaneperoxoic acid, 1,1- dimethylpropyl ester
Naphtha (petroleum), heavy alkylate
Naphtha (petroleum), hydrotreated heavy
Hydroperoxide, 1,1-dimethylpropyl
Peroxydicarbonic acid, dipropyl ester
Neodecaneperoxoic acid, 1-methyl-1- phenylethyl ester
Propaneperoxoic acid, 2,2-dimethylehtyl ester, 1,1-dimethylethyl ester
Peroxide, bis(1,1-dimethylpropyl)

The library search did not detect or identify any presumptive positive identifications.

GC/MS Semivolatiles SW-846 8270C n.a. n.a. n.a. n.a. n.a.

00893 Semivolatile Library Search

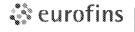
The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

A library search against NIST 11 was performed on this sample with the intent of targeting the following suspected potential contaminants, and the potential breakdown products of the compounds.

Neodecaneperoxoic acid, 1,1- dimethylpropyl ester
Naphtha (petroleum), heavy alkylate
Naphtha (petroleum), hydrotreated heavy
Hydroperoxide, 1,1-dimethylpropyl
Peroxydicarbonic acid, dipropyl ester
Neodecaneperoxoic acid, 1-methyl-1- phenylethyl ester
Propaneperoxoic acid, 2,2-dimethylehtyl ester, 1,1-dimethylethyl ester
Peroxide, bis(1,1-dimethylpropyl)

The library search did not detect or identify any presumptive positive identifications.

^{*=}This limit was used in the evaluation of the final result



Analysis Report

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Sample Description: HH01-01-03-170901-21 Surface Water

ELLE Sample # WW 9190415 ELLE Group # 1845793

Account # 19740

Project Name: Arkema Refinery

Collected: 09/01/2017 19:25 Weston Solutions 13702 Coursey Blvd

Bldg #7, STE A

Submitted: 09/03/2017 11:05 Reported: 09/06/2017 19:00

Baton Rouge LA 70817

13-21 SDG#: WAR01-02

Sample Comments

State of Texas Lab Certification No. T104704194-17-23

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

	Laboratory Sample Analysis Record								
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor	
12121	VOC Targeted Library Search	SW-846 8260B	1	E172481AA	09/05/2017	13:48	Kevin A Sposito	1	
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E172481AA	09/05/2017	13:48	Kevin A Sposito	1	
12126	SVOC Targeted Library Search	SW-846 8270C	1	17246WAA026	09/05/2017	13:26	Linda M Hartenstine	1	
00813	BNA Water Extraction	SW-846 3510C	1	17246WAA026	09/04/2017	20:30	Karen L Beyer	1	

^{*=}This limit was used in the evaluation of the final result



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CAS NUMBER COMPOUND NAME RT EST. CONC. Q		5.0 (g/mL)mL 1 LOW Da dec. Da ap) CAP D:	COMPOUNDS	.90415 6648.i/17sep05a 9/03/17 9/05/17 1.0 JNITS:	! 21 ! !	7.d
1. VOCTIC	! ! CAS NUMBER	! COMPOUND NAME	! !! ! RT !	EST. CONC.	!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!	
2			=====!======!	=========	!=====!	
! 4. 5.			1 !	0	! U !	
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5					!!	
6.	! 4	!			¦}	
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1 8. 9. 1 10.	1 7	:	·		;;	
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110	! 9.	!	i		· ·	
11	!10.	!				
12.	! 1 1 .	!	!!		! !	
13	!12.	!	!!		!!	
14.	!13.	!	!!		!!	
116.	!14	!	!!		!!	
17.	!15		!		!!	
17.	! 16	!			!!	
119.	! 1 /	!			!!	
121.	!18				!!	
121.	!19				!!	
122.					!!	
123.	: 21.	<u>-</u>			¦	
!24!!!	: 44.	<u></u>			¦	
24.	124	:			::	
125.	!25.	:	i		;;	

FORM I VOA-TIC

126._ 127._ 128._ 129._ 130._

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Analysis Report

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TF							
	! ! COMPOUND NAME !		! EST. CONC.				
! 1.SVOCTIC ! 2. ! 3. ! 4. ! 5. ! 6. ! 7. ! 8. ! 9. ! 10. ! 11. ! 12. ! 13. ! 14. ! 15. ! 16. ! 17. ! 18. ! 19. ! 19.	Total SVOC TICs						

FORM I SV-1



Analysis Report

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Sample Description: HH01-01-03-170901-22 Surface Water

ELLE Sample # WW 9190416 ELLE Group # 1845793

Account # 19740

Project Name: Arkema Refinery

Collected: 09/01/2017 19:25

Submitted: 09/03/2017 11:05

Weston Solutions

13702 Coursey Blvd

Bldg #7, STE A

Reported: 09/06/2017 19:00

Baton Rouge LA 70817

13-22 SDG#: WAR01-03

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	n.a.	n.a.	n.a.	
12121	VOC Targeted Library	y Search	n.a.	Complete	0	0	1

00890 VOA GC/MS Library Search

The results from the volatile library search are listed on the attached FORM 1 - VOA-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

A library search against NIST 11 was performed on this sample with the intent of targeting the following suspected potential contaminants, and the potential breakdown products of the compounds.

Neodecaneperoxoic acid, 1,1- dimethylpropyl ester
Naphtha (petroleum), heavy alkylate
Naphtha (petroleum), hydrotreated heavy
Hydroperoxide, 1,1-dimethylpropyl
Peroxydicarbonic acid, dipropyl ester
Neodecaneperoxoic acid, 1-methyl-1- phenylethyl ester
Propaneperoxoic acid, 2,2-dimethylehtyl ester, 1,1-dimethylethyl ester
Peroxide, bis(1,1-dimethylpropyl)

The library search did not detect or identify any presumptive positive identifications.

GC/MS Semivolatiles SW-846 8270C n.a. n.a. n.a. 12126 SVOC Targeted Library Search n.a. Complete 0 0 1

00893 Semivolatile Library Search

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

A library search against NIST 11 was performed on this sample with the intent of targeting the following suspected potential contaminants, and the potential breakdown products of the compounds.

Neodecaneperoxoic acid, 1,1- dimethylpropyl ester
Naphtha (petroleum), heavy alkylate
Naphtha (petroleum), hydrotreated heavy
Hydroperoxide, 1,1-dimethylpropyl
Peroxydicarbonic acid, dipropyl ester
Neodecaneperoxoic acid, 1-methyl-1- phenylethyl ester
Propaneperoxoic acid, 2,2-dimethylehtyl ester, 1,1-dimethylethyl ester
Peroxide, bis(1,1-dimethylpropyl)

The library search did not detect or identify any presumptive positive identifications.

^{*=}This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: HH01-01-03-170901-22 Surface Water

ELLE Sample # WW 9190416 ELLE Group # 1845793

Account # 19740

Project Name: Arkema Refinery

Collected: 09/01/2017 19:25

Submitted: 09/03/2017 11:05

Reported: 09/06/2017 19:00

Weston Solutions 13702 Coursey Blvd Bldg #7, STE A Baton Rouge LA 70817

SDG#: WAR01-03

Sample Comments

State of Texas Lab Certification No. T104704194-17-23

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

	Laboratory Sample Analysis Record								
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor	
12121	VOC Targeted Library Search	SW-846 8260B	1	E172481AA	09/05/2017	14:09	Kevin A Sposito	1	
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E172481AA	09/05/2017	14:09	Kevin A Sposito	1	
12126	SVOC Targeted Library Search	SW-846 8270C	1	17246WAA026	09/05/2017	13:47	Linda M Hartenstine	1	
00813	BNA Water Extraction	SW-846 3510C	1	17246WAA026	09/04/2017	20:30	Karen L Beyer	1	

^{*=}This limit was used in the evaluation of the final result



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	LOW dec. ap) CAP	Contra SAS I Lab Samp Lab File Date Rec Date Ana Dilution CONCENT	NDS act: No.: le ID: 91 e ID:HP15 eived: 09 lyzed: 09	! ! 90416 648.i/17 /03/17 1.0 NITS:	13-: OG No.	*	-!! ! -! 5808.d
!=====================================							

page 1 of 1 FORM I VOA-TIC

!24._ !25._ !26._ !27._ !28._ !29._ !30._



Analysis Report

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Lab Name: Lancas Lab Code: LANCAS Matrix: (soil/wate Sample wt/vol: 979 Level: (low/med) L % Moisture: Concentrated Extra Injection Volume: GPC Cleanup: N Number TICs found	OW Decanted: (Y/N) ct Volume: 1000 (uL) 1 (uL) pH: CONC : 0 (ug/L or ug	CUNDS tract: Lab Sample Lab File II Date Receiv Date Extrac Date Analy: Dilution Fa Extraction ENTRATION UNIVER	J: B10067.d ved: 09/03/17 cted: 09/04/17 zed: 09/05/17 actor: 1 : Sepf ITS:	! ! !
	! ! COMPOUND NAME !			
2				! U ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! !

FORM I SV-1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: HH01-01-04-170901-21 Surface Water

ELLE Sample # WW 9190417 ELLE Group # 1845793 Account # 19740

Project Name: Arkema Refinery

Collected: 09/01/2017 20:00

Submitted: 09/03/2017 11:05

Weston Solutions

13702 Coursey Blvd

Bldg #7, STE A

Reported: 09/06/2017 19:00

Baton Rouge LA 70817

14-21 SDG#: WAR01-04

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	n.a.	n.a.	n.a.	
12121	VOC Targeted Library	y Search	n.a.	Complete	0	0	1

00890 VOA GC/MS Library Search

The results from the volatile library search are listed on the attached FORM 1 - VOA-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

A library search against NIST 11 was performed on this sample with the intent of targeting the following suspected potential contaminants, and the potential breakdown products of the compounds.

Neodecaneperoxoic acid, 1,1- dimethylpropyl ester
Naphtha (petroleum), heavy alkylate
Naphtha (petroleum), hydrotreated heavy
Hydroperoxide, 1,1-dimethylpropyl
Peroxydicarbonic acid, dipropyl ester
Neodecaneperoxoic acid, 1-methyl-1- phenylethyl ester
Propaneperoxoic acid, 2,2-dimethylehtyl ester, 1,1-dimethylethyl ester
Peroxide, bis(1,1-dimethylpropyl)

The library search did not detect or identify any presumptive positive identifications.

GC/MS Semivolatiles SW-846 8270C n.a. n.a. n.a. 12126 SVOC Targeted Library Search n.a. Complete 0 0 1

00893 Semivolatile Library Search

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

A library search against NIST 11 was performed on this sample with the intent of targeting the following suspected potential contaminants, and the potential breakdown products of the compounds.

Neodecaneperoxoic acid, 1,1- dimethylpropyl ester
Naphtha (petroleum), heavy alkylate
Naphtha (petroleum), hydrotreated heavy
Hydroperoxide, 1,1-dimethylpropyl
Peroxydicarbonic acid, dipropyl ester
Neodecaneperoxoic acid, 1-methyl-1- phenylethyl ester
Propaneperoxoic acid, 2,2-dimethylehtyl ester, 1,1-dimethylethyl ester
Peroxide, bis(1,1-dimethylpropyl)

The library search did not detect or identify any presumptive positive identifications.

^{*=}This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: HH01-01-04-170901-21 Surface Water

ELLE Sample # WW 9190417 ELLE Group # 1845793

Project Name: Arkema Refinery

Account # 19740

Collected: 09/01/2017 20:00

Weston Solutions 13702 Coursey Blvd Bldg #7, STE A

Submitted: 09/03/2017 11:05

Baton Rouge LA 70817

Reported: 09/06/2017 19:00

14-21 SDG#: WAR01-04

Sample Comments

State of Texas Lab Certification No. T104704194-17-23

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

	Laboratory Sample Analysis Record									
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor		
12121	VOC Targeted Library Search	SW-846 8260B	1	E172481AA	09/05/2017	14:29	Kevin A Sposito	1		
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E172481AA	09/05/2017	14:29	Kevin A Sposito	1		
12126	SVOC Targeted Library Search	SW-846 8270C	1	17246WAA026	09/05/2017	14:08	Linda M Hartenstine	1		
00813	BNA Water Extraction	SW-846 3510C	1	17246WAA026	09/04/2017	20:30	Karen L Beyer	1		

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Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2308 • Fax: 717-656-2681 • www.LancasterLabs.com

V	1E DLATILE ORGANICS ANA TENTATIVELY IDENTIA			1		PLE NO.	1
Lab Name: Lancast Lab Code: LANCAS Matrix: (soil/wat Sample wt/vol: ! Level: (low/med) % Moisture: not of Column: (pack/ca	5.0 (g/mL)mL LOW dec. ap) CAP	Lab Samp Lab Fil Date Rec Date And Dilution CONCEN	ple ID: 91	!!	No.	21 :a.b/es05	
!========= ! 1. VOCTIC ! 2.	COMPOUND NAME			! ! EST. CO !======! ! !	====		! ! !
! 5. ! 6. ! 7.						! ! !	
! 10 . ! 11 .	!					!	
! 16. ! 17. ! 18.	!					! !	
!22. !23.	 			! 		<u> </u>	!

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!24._ !25._ !26._ !27._ !28._ !29._ !30._



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2308 • Fax: 717-656-2681 • www.LancasterLabs.com

SE	1F MIVOLATILE ORGANICS ANALYSIS D TENTATIVELY IDENTIFIED COMF		EPA SAM	PLE NO.
Lab Code: LANC Matrix: (soil/ Sample wt/vol: Level: (low/me	water) WATER 897 (g/mL) mL d) LOW Decanted: (Y/N) xtract Volume: 1000 (uL) me: 1 (uL) pH: CONC	Lab Sample Lab File I: Lab File I: Date Recei Date Extra Date Analy Dilution F. Extraction	SDG No.: ID: 9190417 D: bi0068.d ved: 09/03/17 cted: 09/04/17 zed: 09/05/17 actor: 1 : Sepf	! !
	! ! COMPOUND NAME	! RT	! ! EST. CONC.	
! 1.SVOCTIC ! 2. ! 3. ! 4. ! 5. ! 6. ! 7. ! 8. ! 9. ! 10. ! 11. ! 12. ! 13. ! 14. ! 15. ! 15. ! 15. ! 17.	!Total SVOC TICS			
page 1 of 1				

FORM I SV-1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: HH01-01-05-170901-21 Surface Water

ELLE Sample # WW 9190418 ELLE Group # 1845793 Account # 19740

Project Name: Arkema Refinery

Collected: 09/01/2017 20:40

Weston Solutions

13702 Coursey Blvd

Bldg #7, STE A

Submitted: 09/03/2017 11:05

Baton Rouge LA 70817 Reported: 09/06/2017 19:00

SDG#: WAR01-05

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	n.a.	n.a.	n.a.	
12121	VOC Targeted Library	y Search	n.a.	Complete	0	0	1

00890 VOA GC/MS Library Search

The results from the volatile library search are listed on the attached FORM 1 - VOA-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

A library search against NIST 11 was performed on this sample with the intent of targeting the following suspected potential contaminants, and the potential breakdown products of the compounds.

Neodecaneperoxoic acid, 1,1- dimethylpropyl ester Naphtha (petroleum), heavy alkylate Naphtha (petroleum), hydrotreated heavy Hydroperoxide, 1,1-dimethylpropyl Peroxydicarbonic acid, dipropyl ester Neodecaneperoxoic acid, 1-methyl-1- phenylethyl ester Propaneperoxoic acid, 2,2-dimethylehtyl ester, 1,1-dimethylethyl ester Peroxide, bis(1,1-dimethylpropyl)

The library search did not detect or identify any presumptive positive identifications.

SW-846 8270C GC/MS Semivolatiles n.a. 12126 SVOC Targeted Library Search Complete n.a.

00893 Semivolatile Library Search

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

A library search against NIST 11 was performed on this sample with the intent of targeting the following suspected potential contaminants, and the potential breakdown products of the compounds.

Neodecaneperoxoic acid, 1,1- dimethylpropyl ester Naphtha (petroleum), heavy alkylate Naphtha (petroleum), hydrotreated heavy Hydroperoxide, 1,1-dimethylpropyl Peroxydicarbonic acid, dipropyl ester Neodecaneperoxoic acid, 1-methyl-1- phenylethyl ester Propaneperoxoic acid, 2,2-dimethylehtyl ester, 1,1-dimethylethyl ester Peroxide, bis(1,1-dimethylpropyl)

The library search did not detect or identify any presumptive positive identifications.

^{*=}This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: HH01-01-05-170901-21 Surface Water

ELLE Sample # WW 9190418 ELLE Group # 1845793

Account # 19740

Project Name: Arkema Refinery

Collected: 09/01/2017 20:40 Weston Solutions 13702 Coursey Blvd

Bldg #7, STE A

Submitted: 09/03/2017 11:05 Reported: 09/06/2017 19:00

SDG#: WAR01-05

Baton Rouge LA 70817

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Sample Comments

State of Texas Lab Certification No. T104704194-17-23

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

	Laboratory Sample Analysis Record									
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor		
12121	VOC Targeted Library Search	SW-846 8260B	1	E172481AA	09/05/2017	14:50	Kevin A Sposito	1		
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E172481AA	09/05/2017	14:50	Kevin A Sposito	1		
12126	SVOC Targeted Library Search	SW-846 8270C	1	17246WAA026	09/05/2017	14:29	Linda M Hartenstine	1		
00813	BNA Water Extraction	SW-846 3510C	1	17246WAA026	09/04/2017	20:30	Karen L Beyer	1		

^{*=}This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2308 • Fax: 717-656-2681 • www.LancasterLabs.com

Lab Name: Lancas Lab Code: LANCAS Matrix: (soil/wa	5.0 (g/mL)mL LOW dec. ap) CAP	ID COMPOUNDS	SDG No. 190418 19048.i/17sep05a 9/03/17 9/05/17 1.0 UNITS:	! 21 ! !	10.d
! CAS NUMBER	! COMPOUND NAME	! ! RT	! ! EST. CONC.	I !	
	!============				
	!Total VOC TICs	1	! 0	! U !	
! 2	!	!		!!	
! 3	!	<u>!</u>	!	!!	
! 4	!	<u></u>		!!	
! 5	!	<u>-</u>	!	!!	
! 6		<u>-</u>		!!	
! 7			!	!!	
! 8			!	!!	
! 9	1			!	
: LU		·	1	!	
	•	·	·	::	
!12	<u> </u>	ii	·	ii	
! 13 . ! 14 .	·	ii	<u></u>	ii	
!15	i	i	·	ii	
116	!	· · · · · · · · · · · · · · · · · · ·		· :	
!17	1	·	· !	ii	
!18.			!	ii	
!19	!		İ	ii	
120.	!	i	!	ii	
!21	!			·	
!22.	!		!	!	
123.	!	!	!	!	
!24.	!		!	! !	
!25	!	!!	!	!!	

FORM I VOA-TIC

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Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2308 • Fax: 717-656-2681 • www.LancasterLabs.com

Lab Name: Lancas Lab Code: LANCAS Matrix: (soil/wate Sample wt/vol: 951 Level: (low/med) L % Moisture: Concentrated Extra Injection Volume: GPC Cleanup: N Number TICs found	(g/mL) mL OW Decanted: (Y/N) ct Volume: 1000 (uL) 1 (uL) pH: CONCEN : 0 (ug/L or ug/K	NDS act: No.: Lab Sample Lab File I Date Recei Date Extra Date Analy Dilution F Extraction TRATION UN g) ug/L	ID: 9190418 D: bi0069.d ved: 09/03/17 cted: 09/04/17 zed: 09/05/17 actor: 1 : Sepf ITS:	! ! !
! ! CAS NUMBER	! ! COMPOUND NAME !	! ! RT	! ! EST. CONC.	! Q !
! 1.SVOCTIC ! 2. ! 3. ! 4. ! 5. ! 6. ! 7. ! 8. ! 9 . ! 10. ! 11. ! 12. ! 13. ! 14. ! 15. ! 16. ! 17. ! 18. ! 19. ! 20. ! 21. ! 22. ! 23.	Total SVOC TICs			

FORM I SV-1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: HH01-01-01-170901-21 Surface Water

ELLE Sample # WW 9190419 ELLE Group # 1845793 Account # 19740

Project Name: Arkema Refinery

Collected: 09/01/2017 17:36

Submitted: 09/03/2017 11:05

Reported: 09/06/2017 19:00

Weston Solutions

13702 Coursey Blvd

Bldg #7, STE A

Baton Rouge LA 70817

L1-21 SDG#: WAR01-06

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	n.a.	n.a.	n.a.	
12121	VOC Targeted Library	Search	n.a.	Complete	0	0	1

00890 VOA GC/MS Library Search

The results from the volatile library search are listed on the attached FORM 1 - VOA-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

A library search against NIST 11 was performed on this sample with the intent of targeting the following suspected potential contaminants, and the potential breakdown products of the compounds.

Neodecaneperoxoic acid, 1,1- dimethylpropyl ester
Naphtha (petroleum), heavy alkylate
Naphtha (petroleum), hydrotreated heavy
Hydroperoxide, 1,1-dimethylpropyl
Peroxydicarbonic acid, dipropyl ester
Neodecaneperoxoic acid, 1-methyl-1- phenylethyl ester
Propaneperoxoic acid, 2,2-dimethylehtyl ester, 1,1-dimethylethyl ester
Peroxide, bis(1,1-dimethylpropyl)

The library search did not detect or identify any presumptive positive identifications.

GC/MS Semivolatiles SW-846 8270C n.a. n.a. n.a. 12126 SVOC Targeted Library Search n.a. Complete 0 0 1

00893 Semivolatile Library Search

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

A library search against NIST 11 was performed on this sample with the intent of targeting the following suspected potential contaminants, and the potential breakdown products of the compounds.

Neodecaneperoxoic acid, 1,1- dimethylpropyl ester
Naphtha (petroleum), heavy alkylate
Naphtha (petroleum), hydrotreated heavy
Hydroperoxide, 1,1-dimethylpropyl
Peroxydicarbonic acid, dipropyl ester
Neodecaneperoxoic acid, 1-methyl-1- phenylethyl ester
Propaneperoxoic acid, 2,2-dimethylehtyl ester, 1,1-dimethylethyl ester
Peroxide, bis(1,1-dimethylpropyl)

The library search did not detect or identify any presumptive positive identifications.

^{*=}This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: HH01-01-01-170901-21 Surface Water

ELLE Sample # WW 9190419 ELLE Group # 1845793

Project Name: Arkema Refinery

Account # 19740

Weston Solutions 13702 Coursey Blvd Bldg #7, STE A

Submitted: 09/03/2017 11:05

Collected: 09/01/2017 17:36

Baton Rouge LA 70817

Reported: 09/06/2017 19:00

11-21 SDG#: WAR01-06

Sample Comments

State of Texas Lab Certification No. T104704194-17-23

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

	Laboratory Sample Analysis Record									
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor		
12121	VOC Targeted Library Search	SW-846 8260B	1	E172481AA	09/05/2017	15:10	Matthew S Krause	1		
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E172481AA	09/05/2017	15:10	Matthew S Krause	1		
12126	SVOC Targeted Library Search	SW-846 8270C	1	17246WAA026	09/05/2017	14:50	Linda M Hartenstine	1		
00813	BNA Water Extraction	SW-846 3510C	1	17246WAA026	09/04/2017	20:30	Karen L Beyer	1		

^{*=}This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2308 • Fax: 717-656-2681 • www.LancasterLabs.com

Lab Name: Lancas	5.0 (g/mL)mL LOW dec. ap) CAP	ED COMPOUNDS Contract:	SDG No. 190419 5648.i/17sep05. 9/03/17 9/05/17 1.0 UNITS:	! 21 ! !
! CAS NUMBER	! ! COMPOUND NAME	! ! RT	! ! EST. CONC.	· · · · · · · · · · · · · · · · · · ·
! 1. VOCTIC ! 2			! ========	
!10. !11. !12. !13. !14. !15.	! 			
!18. !19. !20. !21. !22. !23. !24. !25.				

FORM I VOA-TIC

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Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2308 • Fax: 717-656-2681 • www.LancasterLabs.com

Lab Name: Lancas Lab Code: LANCAS Matrix: (soil/wate Sample wt/vol: 961 Level: (low/med) I % Moisture: Concentrated Extra Injection Volume: GPC Cleanup: N Number TICs found	OW Decanted: (Y/N) ct Volume: 1000 (uL) 1 (uL) pH: CONCE : 0 (ug/L or ug/	TACT: NO.: Lab Sample Lab File I Date Recei Date Extra Date Analy Dilution F Extraction NTRATION UN Kg) ug/L	D: bi0070.d ved: 09/03/17 cted: 09/04/17 zed: 09/05/17 actor: 1 : Sepf ITS:	! ! !
	! ! COMPOUND NAME !			
! 1.SVOCTIC ! 2. ! 3. ! 4. ! 5. ! 6. ! 7. ! 8. ! 9. ! 10. ! 11. ! 12. ! 13. ! 14. ! 15. ! 16. ! 17. ! 18. ! 19. ! 20. ! 21.	Total SVOC TICS			

FORM I SV-1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Quality Control Summary

Client Name: Weston Solutions Group Number: 1845793
Reported: 09/06/2017 19:00

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

^{*-} Outside of specification

^{**-}This limit was used in the evaluation of the final result for the blank

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Page 1 of 1

USEPA
DateShipped:

CarrierName:

CHAIN OF CUSTODY RECORD

Site #: 66666

Contact Name: Jeff Wright

No: 6-090117-212820-0002

Cooler #:

Lab: Eurofins Lancaster Laboratories Environmental

Lab Phone: 717-656-2300

AirbillNo: Contact Phone:

Lab#	Sample #	Location	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC
	HH01-01-02-170901-21	2	Arkema Analysis VOC	Surface Water	9/1/2017	18:20	3	40 ml VOA	4 C	
	HH01-01-02-170901-21	2	Arkema Analysis SVOC	Surface Water	9/1/2017	18:20	2	1 liter amber	4 C	
	HH01-01-03-170901-21	3	Arkema Analysis VOC	Surface Water	9/1/2017	19:25	3	40 ml VOA	4 C	
	HH01-01-03-170901-21	3	Arkema Analysis SVOC	Surface Water	9/1/2017	19:25	2	1 liter amber	4 C	
	HH01-01-03-170901-22	3	Arkema Analysis VOC	Surface Water	9/1/2017	19:25	3	40 ml VOA	4 C	
	HH01-01-03-170901-22	3	Arkema Analysis SVOC	Surface Water	9/1/2017	19:25	2	1 liter amber	4 C	
	HH01-01-04-170901-21	4	Arkema Analysis VOC	Surface Water	9/1/2017	20:00	3	40 ml VOA	4 C	
	HH01-01-04-170901-21	4	Arkema Analysis SVOC	Surface Water	9/1/2017	20:00	2	1 liter amber	4 C	<u> </u>
	HH01-01-05-170901-21	5	Arkema Analysis VOC	Surface Water	9/1/2017	20:40	3	40 ml VOA	4 C	1
	HH01-01-05-170901-21	5	Arkema Analysis SVOC	Surface Water	9/1/2017	20:40	2	1 liter amber	4 C	1
***************************************	HH01-01-01-170901-21	1	Arkema Analysis VOC	Surface Water	9/1/2017	17:36	3	40 ml VOA	4 C	
	HH01-01-01-170901-21	1	Arkema Analysis SVOC	Surface Water	9/1/2017	17:36	63	1 liter amber	4 C	
								Y11Y17-Y11901011111111111111111111111111111111		

l					***************************************
Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
O*	Thom q. Waln	1090/100			
	0				
			Annelies H.Owen ELLE	9/3/17/1105	intact

Special Instructions:



Sample Administration Receipt Documentation Log

Doc Log ID: 193340

Group Number(s): 1845793

Client: USEPA

Delivery and Receipt Information

Delivery Method: <u>ELLE Courier</u> Arrival Timestamp: <u>09/03/2017_11:05</u>

Number of Packages: 2 Number of Projects: 1

State/Province of Origin: TX

Arrival Condition Summary

Shipping Container Sealed: Yes Sample IDs on COC match Containers: Yes Custody Seal Present: Yes Sample Date/Times match COC: Yes

Custody Seal Intact: Yes VOA Vial Headspace ≥ 6mm: N/A

Samples Chilled: Yes Total Trip Blank Qty: 0

Paperwork Enclosed: Yes Air Quality Samples Present: No

Samples Intact: Yes
Missing Samples: No

Extra Samples: No

Discrepancy in Container Qty on COC: Yes

Unpacked by Anneliese Owen (210) at 12:05 on 09/03/2017

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler#	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	32170023	1.2	IR	Wet	Υ	Bagged	N
2	32170023	1.4	IR	Wet	Υ	Bagged	N

Container Quantity Discrepancy Details

Sample ID on COC	Container Qty. Received	Container Qty. on COC	<u>Comments</u>
HH01-01-05-170901-21	12	5	Received 6 vials and 6 amber liters
HH01-01-01-170901-21	5	9	Received 3 vials and 2 amber liters

Page 1 of 1



Dry weight

basis

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mg	milligram(s)
С	degrees Celsius	mL	milliliter(s)
cfu	colony forming units	MPN	Most Probable Number
CP Units	cobalt-chloroplatinate units	N.D.	non-detect
F	degrees Fahrenheit	ng	nanogram(s)
g	gram(s)	NTU	nephelometric turbidity units
IU	International Units	pg/L	picogram/liter
kg	kilogram(s)	RL	Reporting Limit
L	liter(s)	TNTC	Too Numerous To Count
lb.	pound(s)	μg	microgram(s)
m3	cubic meter(s)	μL	microliter(s)
meq	milliequivalents	umhos/cm	micromhos/cm
<	less than		
>	greater than		
ppm		equivalent to milli	kilogram (mg/kg) or one gram per million grams. For grams per liter (mg/l), because one liter of water has a weight uivalent to one microliter per liter of gas.
ppb	parts per billion		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Results printed under this heading have been adjusted for moisture content. This increases the analyte weight

concentration to approximate the value present in a similar sample without moisture. All other results are reported on an

Measurement uncertainty values, as applicable, are available upon request.

as-received basis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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Data Qualifiers

Qualifier	Definition
С	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
Р	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.